

## Curriculum Vitae

### Personal information

Given name: **Eshagh**  
Last name: **Keshtkar**  
  
Date of birth: 19, March 1980  
Nationality: Iranian  
Tel. +98 2148292135  
Fax +98 2148292200  
E-mail: [ikeshtkar@gmail.com](mailto:ikeshtkar@gmail.com)  
[keshtkar@modares.ac.ir](mailto:keshtkar@modares.ac.ir)

### Education

- Ph.D.** Department of Agroecology - Crop Health, Aarhus University ([www.au.dk](http://www.au.dk)), Denmark, Nov 2011 – June 2015  
  
*Ph.D. dissertation:* Ecological fitness, molecular basis, and selection of resistant blackgrass (*Alopecurus myosuroides*) biotypes
- M.Sc.** Department of Agronomy and Plant Breeding, University of Tehran ([www.ut.ac.ir](http://www.ut.ac.ir)), Tehran, Iran, September 2005 – September 2007.  
**GPA: 18.75 out of 20**  
  
*M.Sc. thesis:* Comparing herbigation and conventional method of eradican application in a corn field and characterization of the best time for it in furrow irrigation considering the evenness of distribution.  
*Score:* Excellent, 19.75 out of 20.
- B.Sc.** Department of Agronomy and Plant Breeding, Islamic Azad University Fasa Branch ([www.iaufasa.ac.ir](http://www.iaufasa.ac.ir)), Fasa, Iran, September 1999- February 2002.  
**GPA: 17.45 out of 20**

## Scholarship/Awards/honors

- Recipient of “*Dr. Kazemi Ashtiani*” Research Grant Award for Young Assistant Professor, Iran's National Elite Foundation, April 2017.
- PhD scholarship for studying abroad by Iranian Ministry of Science, Research and Technology, September 2010.
- Ranked first in the Ph.D entrance exam at University of Tehran in 2009 (nominated as an elite student by University of Tehran) in the field of weed science
- Ranked second in the overall entrance exam for M.Sc in Iran in 2005 (nominated as an elite student by the Iranian Measurement Organization) in the field of weed science
- Ranked second in B.Sc. duration among all of classmates with GPA: 17.45 out of 20
- Ranked second in M.Sc. duration among all of classmates with GPA: 18.75 out of 20
- Ranked first in the employment test of Agriculture Ministry of Iran in Marvdasht, Fars Province June 2004
- Ranked third in the employment test of Agriculture Ministry of Iran in Fars Province, June 2004
- Received honorary document (2005) by the GImyan Abarj Cooperative Production Management (in Marvdasht city) in lieu of trying to pass the Wheat Plan.
- Received honorary document (2005) by the City Council of Abarj Bidgol village (in Marvdasht city) in lieu of devising Wheat Field Management.

## Work experiences and skills

- Experience with agricultural experimental design
- Experience with field and greenhouse works and data collection
- Experience with evaluation of herbicide performance
- Experience with Dose-response experiments (experimental design, data collection and data analysis)
- Experience with statistical concepts and data analysis using statistical software SAS, R, SPSS.
- Experience with weed seed germination experiments and data analysis

- Experience with molecular biology (PCR, gell doc, Electrophoresis ..)
- MS Office (Word, Excel, PowerPoint), R, SAS, Minitab, MSTAT-C
- Engineer supervisor in wheat field at the Iranian Department of Agriculture (2004-2005)

## Publications

### Peer reviewed papers

- Zamani M.H., **Keshtkar E** ✉, Zand, E Sasanfar H. (2022) Seed germination and seedling emergence fitness of clodinafop-propargyl resistant *Lolium rigidum* populations. *Gesunde Pflanzen* (Accepted, December 5, 2022) [10.1007/s10343-022-00812-1](https://doi.org/10.1007/s10343-022-00812-1)
- Keshtkar E** ✉, Kudsk P, Mesgaran MB ✉ (2021) Perspective: common errors in dose–response analysis and how to avoid them. *Pest Management Science* 77:2599–2608 <https://doi.org/10.1002/ps.6268>
- Minbashi Moeini M ✉, **Keshtkar E** ✉, Sasanfar, H Baghestani M.A (2021) Germination biology and phenological development stages of false jagged-chickweed (*Lepyroclis holosteoides*). *Journal of Plant Protection Research* 61(4):347–357 [10.24425/jppr.2021.139243](https://doi.org/10.24425/jppr.2021.139243)
- Alizade S, **Keshtkar E** ✉, Mokhtassi-Bidgoli A, Sasanfar H, Streibig JC (2021) Effect of drought stress on herbicide performance and photosynthetic activity of *Avena sterilis* subsp. *ludoviciana* (winter wild oat) and *Hordeum spontaneum* (wild barley). *Weed Research* 61:288–297 <https://doi.org/10.1111/wre.12477>
- Sasanfar H, Zand E, Zamani MH, **Keshtkar E**, Joumi A (2021) Resistance of the problematic grass weeds to some commonly used herbicides in canola (*Brassica napus* L.) fields in three provinces of Iran. *Iranian Journal of Weed Science* 17 (2) 79-98 (in Persian with English abstract) [10.22092/IJWS.2021.353147.1383](https://doi.org/10.22092/IJWS.2021.353147.1383)
- Ghafouri Z, **Keshtkar E** ✉, AghaAlikhani M, Mahdavian A (2021) Effect of ultrasound waves, chilling and mechanical abrasion on dormancy-breaking and germination characteristics of *Daturastramonium* and *Convolvulus arvensis*. *Iranian Journal of Seed Science and Technology* 10: 127-139 (in Persian with English abstract) [10.22034/IJSST.2020.128548.1312](https://doi.org/10.22034/IJSST.2020.128548.1312)

Zamani M.H., **Keshtkar E** ✉, Zand, E Sasanfar H. (2021) Monitoring the resistance status of canarygrass (*Phalaris minor*) accessions to some commonly used herbicides in wheat fields of five provinces of Iran. *Iranian Journal of Weed Science* 17: 111-121 (in Persian with English abstract) [10.22092/ijws.2020.343119.1371](https://doi.org/10.22092/ijws.2020.343119.1371)

**Keshtkar E** ✉, Mathiassen SK, AghaAlikhani M, Kudsk P (2020) Differences in growth, development and innate seed dormancy of susceptible and fenoxaprop-P non-target site resistant black-grass sub-populations. *Crop Protection* 129:105022 <https://doi.org/10.1016/j.cropro.2020.105292>

Alizade S, **Keshtkar E** ✉, Mokhtassi-Bidgoli A, Sasanfar H, Streibig JC (2020) Effect of water deficit stress on benzoylprop-ethyl performance and physiological traits of winter wild oat (*Avena sterilis* subsp. *ludoviciana*). *Crop Protection* 137:105292 <https://doi.org/10.1016/j.cropro.2020.105292>

Jensen SM, Wolkis D, **Keshtkar E**, Streibig JC, Ritz C ✉ (2020) Improved two-step analysis of germination data from complex experimental designs. *Seed Science Research* 30:194-198 <https://doi.org/10.1017/S0960258520000331>


Asadi-Sabzi M, **Keshtkar E** ✉, Mokhtassi-Bidgoli A, Moss SR (2020) Quantifying the detrimental effect of airborne dust on herbicide efficacy. *Weed Research* 60:204-211 <https://doi.org/10.1111/wre.12413>


Ghazali Z, **Keshtkar E** ✉, AghaAlikhani M, Kudsk P (2020) Germinability and seed biochemical properties of susceptible and non-target site herbicide-resistant blackgrass (*Alopecurus myosuroides*) subpopulations exposed to abiotic stresses. *Weed Science* 68:157-167 <https://doi.org/10.1017/wsc.2020.9>


Ghazali Z, **Keshtkar E** ✉, AghaAlikhani M, Kudsk P (2020) Relative Fitness of Susceptible and Acetyl-CoA carboxylase Resistant *Alopecurus myosuroides* Biotypes: Germinability and Seedling Pre-Emergence Growth under Salinity and Drought Stress Conditions. *Iranian Journal of Weed Science* 16 (1): 66 (in Persian with English abstract) <https://dx.doi.org/10.22092/IJWS.2020.1601.1329>


**Keshtkar E** ✉, Abdolshahi, R., Sasanfar, H., Zand, E., Beffa, R., Dayan, F.E., Kudsk, P., 2019. Assessing fitness costs from a herbicide-resistance management


Perspective: A Review and Insight. *Weed Science* 67, 137-14  
<https://doi.org/10.1017/wsc.2018.63>


Asadi-Sabzi, M., **Keshtkar E** , Mokhtassi-Bidgoli, A (2019) Effect of dust on the growth and physiological properties of wild mustard and wild barley in greenhouse conditions. *Iranian Journal of Weed Science* 15:29-39 in Persian with English abstract) <https://dx.doi.org/10.22092/IJWS.2019.1501.03>


**Keshtkar E** , Mathiassen SK, Kudsk P (2017) No Vegetative and fecundity fitness cost associated with Acetyl-Coenzyme A Carboxylase non-target-site resistance in a black-grass (*Alopecurus myosuroides* Huds) Population. *Frontiers in Plant Science* 8 <https://doi.org/10.3389/fpls.2017.02011>

**Keshtkar E** , Mathiassen SK, Beffa B, Kudsk P (2017) Seed germination and seedling emergence of blackgrass (*Alopecurus myosuroides* Huds) as affected by non-target-site herbicide resistance. *Weed Science* 65:732-742  
<https://doi.org/10.1017/wsc.2017.44>

Jensen, S.M., Jensen, A., Streibig, J.C., **Keshtkar, E.**, and Ritz C.  2017. A note on the analysis of germination data from complex experimental designs. *Seed Science Research*. 27:321-327 <https://doi.org/10.1017/S0960258517000228>

**Keshtkar, E** , Mathiassen, S. K., Moss, S. R., and Kudsk, P. 2015. Resistance profile of herbicide-resistant *Alopecurus myosuroides* (black-grass) populations in Denmark. *Crop Protection* 69, 83-89  
<http://dx.doi.org/10.1016/j.cropro.2014.12.016>

**Keshtkar E.**, Kordbacheh, F., Mesgaran, M. B. , Mashhadi, H. R. and Alizadeh, H. M. 2009. Effects of the sowing depth and temperature on the seedling emergence and early growth of wild barley (*Hordeum spontaneum*) and wheat. *Weed Biology and Management*. 9: 10–19 <https://doi.org/10.1111/j.1445-6664.2008.00313.x>

Baziar, M. R. , Zare, A., **Keshtkar, E.** and Ohadi, O. 2009. Studying the effect of crop straw burning on germination and growth of weeds. *Research on Crops*. 10: 210-221.

**Keshtkar E.** ✉, Alizadeh, H. M., and Abbasi, F. 2010. Comparing herbigation and conventional method of eradican (eptc+dichloroacetamide) application in controlling corn weeds. *Iranian Journal of Field Crop Science* 41: 1-10 (In Persian with English abstract)

Karimmojeni H., **Keshtkar**, E. Mashhadi, H. R., Alizadeh, H. M. ✉, and Yaghobi Ashrafi, Z. 2010. Dormancy breaking of cocklebur (*Xanthium strumarium* L.) Seeds. *Iranian Journal of Field Crop Science*. 41:503-511 (In Persian with English abstract)

Karimmojeni H., Mashhadi, H. R., Alizade, H. ✉, **Keshtkar**, E. Yaghobi Ashrafi, Z. and Raofirad, V. 2009. Investigation of environmental factors and plant growth regulators effect on dormancy breaking and stimulation of germination of the datura seeds (*Datura stramonium* L.). *Iranian Journal of Field Crop Science* 40:71-79 (In Persian with English abstract)

**Keshtkar E.** ✉, H. M. Alizadeh and F. Abbasi. 2008. Comparing herbigation and conventional method of eradican application in a corn field. *Crop Research*. 36: 54-59.

#### **Non-refereed Publications**

Kordbacheh F., **E. Keshtkar**, M. B. Mesgaran, H. Mashhadi, 2008. Effect of sowing depth and temperature on wild barley (*Hordeum spontaneum*) seedling emergence. Magazine of Khooshe. 71: 15-17 (In Persian).

Ohadi S., M.B. Mesgaran and **E. Keshtkar**. 2009. Phytotoxicity of nanoparticles: inhibition on seed germination and root growth. (Translation into Persian). Iran Nanotechnology Initiative Council. Journal of Nanotechnology. 134: 545-548. (In Persian).

#### **Book/ book chapters**

**Keshtkar, E.**, Beffa R, Kudsk P (2023) Fitness and Eco-Physiological Cost of Herbicide Metabolic Resistance. Pages XX in Nandula VK, Beffa R, eds. Herbicide Metabolism and Weed Resistance. USA: John Wiley & Sons, Inc. (under review)

Zand E, **Keshtkar E**, Mousavi SK, Heidari, A (2021) Herbicides and Their Application Technology, 3rd edition. P 865. Iran, Mashhad: JDM Press (in Persian)

**Keshtkar E**, Zand E, Mousavi SK (2015) Applying herbicides through irrigation systems. Pages 467-492 in Zand E, Mousavi SK, Heidari A, eds. Herbicides and Their Application Methods , 1th and 2nd Edition. Iran, Mashhad: JDM Press (in Persian)

### **Presentations**

Giahchin, M., **Keshtkar, E.**, Ahmadi, N. (2021) Response of winter wild oat (*Avena sterilis* subsp. *ludoviciana* Durieu.) and spring wild oat (*Avena fatua* L.) to increasing doses of clodinafop-propargyl (topic). *Proceeding of the 9<sup>th</sup> National Weed Science Congress of Iran*. Tehran. November 16-17, 2021 (poster presentation). P.1-5 (In Persian with English abstract)

**Keshtkar E**, R., Sasanfar, H., Zand, E. (2019). The main challenge to evaluate herbicide resistance fitness cost: Lack of genetic background control of plant materials . *Proceeding of the 8<sup>th</sup> National Weed Science Congress of Iran*. Mashahd. August 27-29, 2019 (Oral presentation). P.862-869. (In Persian with English abstract)

Zand E., Sasanfar H.R. , Khalil Tahmasebi B., Forouzesh A., Meighani F., **Keshtkar E.** (2019). An overview of some advances in the area of herbicide resistant weeds. *Proceeding of the 8<sup>th</sup> National Weed Science Congress of Iran*. Mashahd. August 27-29, 2019 (Oral presentation). P.81-112. (In Persian with English abstract)

Asadi Sabzi, M., **Keshtkar, E.** and Mokhtassi Bidgoli, A. (2017). Paraquat Efficacy on Control of *Sinapis arvensis* as influenced by Dust. 2<sup>nd</sup> National Conference of New Achivments in Agronomy and Plant Breeding, *Tehran, Iran*. November 30, 2017. P.1-5 (poster presentation).

Ghazali, Z., **Keshtkar, E.**, Aghaalikhani, M. and Kudsk, P.(2017). Relative fitness of susceptible and resistant (NTSR) phenotypes of *Alopecurus myosuroides* considering to seed germination under drought stress conditions. *Proceeding of the 7<sup>th</sup> National Weed Science Congress of Iran. Gorgan*. August 27-29 2017 (poster presentation). Vol. 2: *Biology of Weeds and Invasive Plants*. P.1-4. (In Persian with English abstract)

Asadi Sabzi, M., **Keshtkar, E.** and Mokhtassi Bidgoli, A. (2017). Effect of dust on efficacy of glyphosate on control of wild mustard and wild barley under a greenhouse condition. *Proceeding of the 7<sup>th</sup> National Weed Science Congress of Iran. Gorgan*. August 27-29 2017 (poster presentation). Vol. 4: *Chemical Weed Control*. P.1-4. (In Persian with English abstract)

Bastiaans, L., Panozzo, S., Kudsk, P., **Keshtkar, E.**, Werf, W., Holst, N., Mathiassen, S.K., Scarabel, L., Sattin, M. (2016). From field experiments to modelling of herbicide resistance evolution. *Proceeding of 7<sup>th</sup> International weed science congress, Prague, Czech Republic. June 19-25, 2016 (Poster presentation)*. p.305.

**Keshtkar E.**, Mathiassen, S. K., Beffa, R. and Kudsk, P. (2015) Non-target site resistant *Alopecurus myosuroides* phenotypes associated with ecological fitness cost: Influence of sowing depth and temperature on seedling emergence. *Proceeding of the 6<sup>th</sup> National Weed Science Congress of Iran. Birjand. September 1-3 2015 (Oral presentation)*. Vol. 2: *Weed Biology & Ecology*. P.290-293. (In Persian with English abstract)

**Keshtkar, E.**, Mathiassen, S. K., and Kudsk, P. (2015). Decreased fitness of herbicide resistant weeds suggests options for management Case study, *Alopecurus myosuroides*. *IPM Innovation in Europe. Poznań, Poland. January 14–16, 2015 (Oral presentation)* Book of Abstracts: p56

**Keshtkar E.**, P. Kudsk and S.K. Mathiassen. (2014). Germination and dormancy of susceptible and non-target site fenoxaprop resistant phenotypes in a single Danish blackgrass population. *Herbicide resistance in Europe: Challenges, opportunities and threats: Frankfurt, Germany. May 19-20, 2014 (Poster presentation)*.

**Keshtkar E**, S.K. Mathiassen and P. Kudsk. (2013). Evaluation of blackgrass (*Alopecurus myosuroides*) populations' resistance to fenoxaprop-P-ethyl, cycloxydim, flupyr-sulfuron-methyl and mesosulfuron-methyl+iodosulfuron-methyl. *Proceeding of the Global Herbicide Resistance Challenge Conference, Fremantle, Australia, p.59 (Poster presentation)*.

**Keshtkar E.**, H. M. Alizadeh, F. Abbasi. (2008). The effect of eradicane application using herbigation in comparison to conventional method for weed control in corn (*Zea mays* L.). *Proceeding of the 2<sup>nd</sup> National Weed Science Congress of Iran. Mashhad. Vol.1: Weed Management & Herbicides*. P.334-337. (In Persian with English abstract)

**Keshtkar E.**, F. Kordbacheh, M. B. Mesgaran, H. R.Mashhadi. (2008). Comparing the early growth of wheat and wild barley (*Hordeum spontaneum*) at different thermal regimes and sowing depths. *Proceeding of the 2<sup>nd</sup> National Weed Science Congress of Iran. Mashhad. Vol. 2: Weed Biology & Ecophysiology*. P.75-80. (In Persian with English abstract)



- Kordbacheh F., **E. Keshtkar**, M. B. Mesgaran, H. R. Mashhadi. (2008). Effect of sowing depth and temperature on seedling emergence of wild barley (*Hordeum spontaneum*) and wheat. *Proceeding of the 2<sup>nd</sup> National Weed Science Congress of Iran. Mashhad. Vol.2: Weed Biology & Ecophysiology. P.132-137.* (In Persian with English abstract)
- Keshtkar E.**, H. M. Alizadeh, F. Abbasi and M. Mesgaran. (2008). Corn yield and weed control as affected by method and rate of eradican. *Proceeding of 5<sup>th</sup> International weed science congress, Vancouver, Canada. p.187.*
- Kordbacheh F., **E. Keshtkar**, M. B. Mesgaran, H. Mashhadi, H. Alizadeh. (2008). Effect of sowing depth and temperature regime on wild barley (*Hordeum spontaneum*) and wheat seedling emergence and early growth. *Proceeding of 5<sup>th</sup> International weed science congress, Vancouver, Canada. p.113.*
- Keshtkar E.**, H. M. Alizadeh, F. Abbasi and H. R. Mashhadi. (2008). Evaluation of evenness distribution of eradican herbicide in herbigation method. *Proceeding of the 2<sup>nd</sup> Seminar on Improving and Rehabilitation of Surface Irrigation Systestms. Karaj, Iran. Publication Issue:129. p. 75-82.* (In Persian)

## Teaching & Mentoring

### MSc Supervised Projects:

Efficacy of herbicides and physiological responses of weeds under global climate change factors including dust storm and drought stress (MSc students: Mr. Saeid Alizade and Mr. Masoud Asadi-Sabzi )

Relative fitness of susceptible and non-target-site resistant (NTSR) biotypes of black-grass (*Alopecurus myosuroides*) concerning to seed germination in laboratory conditions. (MSc student: Ms. Zahra Ghazali)

Detecting and mapping of ACCase- and ALS-resistant seed canary grass (*Phalaris minor*), wimmera ryegrass (*Llium rigidu.*) and winter wild oat (*Avena ludoviciana.*) populations collected within wheat (MSc students: Mr. Mohammad H. Zamani and Mr. Ali Jomi)

Investigation of possible seed dormancy breaking of four broadleaf weed species using ultrasonic waves (MSc students: Ms Hajar Ghafouri)

Evaluation of efficacy and compatibility of some herbicides with sunn pest (*Eurygaster integriceps*) insecticides in dryland winter wheat (*Triticum aestivum*) (MSc students: Mr. Ayoub Iranshahi)

### Supervised and Co-supervised Graduate Students

|                     |                                  |
|---------------------|----------------------------------|
| Masoud Asadi-Sabzi  | MSc in Weed Science (2015-2017)  |
| Zahra Ghazali       | MSc in Weed Science (2015-2017)  |
| Saeid Alizade       | MSc in Weed Science (2016-2018)  |
| Hajar Ghafouri      | MSc in Weed Science (2016-2018)  |
| Ayoub Iranshahi     | MSc in Weed Science (2017-2019)  |
| Houshang mehrfam    | MSc in Agronomy (2017- 2019)     |
| Mohammad S. Sadeghi | MSc in Horticulture (2017-2019)  |
| Mohammad H. Zamani  | MSc in Weed Science (2018- 2020) |
| Ali Jomi            | MSc in Weed Science (2018- 2020) |
| Faranak MehrAzin    | MSc in Weed Science (2019- 2022) |
| Mohammad Giahchin   | MSc in Weed Science (2019- 2022) |
| Basem M.abdolkarim  | PhD in Agronomy (2018- present)  |
| Ebrahim Zarei       | PhD in Agronomy (2018- present)  |

### Postgraduate taught courses

|                                    |                                       |
|------------------------------------|---------------------------------------|
| Herbicides and Application Methods | (fall semester, 2015-2018, 2020)      |
| Herbicides Modes of Action         | (spring semester, 2016-2019, 2021)    |
| Integrated Weed Management         | (spring semester, 2020, 2022-ongoing) |
| Seed Ecology                       | (fall semester, 2018, 2021)           |

## Professional Societies

Member of Iranian Society of Weed Science (2005-present)

Member of European Weed Research Society (2014-2015, 2022-present)

Members of Agricultural & Natural Resources Engineering Organization of Fars Province, Iran (2002-present)